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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,036	02/02/2001	Dennis J. Malfer	EP- 7503	8721

7590 04/10/2003

ETHYL CORPORATION
330 South Fourth Street
Richmond, VA 23219

EXAMINER

TOOMER, CEPHIA D

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/776,036

Applicant(s)

MALFER ET AL.

Examiner

Cephia D. Toomer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13-31, 35-53, 57-59 and 63-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-31, 35-53, 57-59 and 63-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9. 6) ☐ Other: _____

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DETAILED ACTION

This Office action is in response to the amendment filed March 21, 2003 in which claims 1, 17, 40 and 59 were amended and claims 10-12, 32-34, 54-56 and 60-62 were canceled. The finality of the prior Office action is withdrawn in view of the new ground of rejection.

The 103 rejection of the claims over Malfer '988 and Malfer '612 are withdrawn in view of the amendment to the claims and Applicant's arguments regarding the unexpected results obtained when the Mannich reaction product is prepared with dibutylamine.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9, 13, 59 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 182,940.

EP teaches a fuel composition comprising from 5 to about 500 ptb of Mannich reaction wherein the product is prepared by reacting a phenol substituted with a medium length branched alkyl chain, an amine and an aldehyde (see abstract; page 7, third paragraph; page 9, second paragraph), wherein the molar ratio of phenol:aldehyde:amine is 1.0:1-2:1-2 (see page 2, third paragraph).

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The phenol may be prepared by alkylating cresol with a branched alkyl derived from a 1-olefin oligomer (such as polybutylene) having from 16 to 40 carbon atoms (molecular weight up to 580) (see page 2, first and second paragraph; page 4, first full paragraph). EP teaches that dibutylamine is a preferred amine for use in the reaction (see page 5, first full paragraph; claim 10 and 22). In the examples, EP prepares the Mannich product by heating the reactants at a temperature from 60 to about 130 °C (see page 4, lines 8-12 and Examples). EP teaches that the composition reduces intake valve deposits (see page 6, third paragraph).

Accordingly, EP teaching all the limitations of the claims, anticipates the claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-31, 35-53, 57-58 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 182 940 as applied to claims above, and further in view of Malfer (US 5,725,612).

EP has been discussed above. EP fails to teach that the additive is combined with a carrier fluid. However, Malfer teaches this difference. Malfer teaches PAO carriers, polyoxyalkylene carriers, solvent carriers and mixtures thereof. The polyoxyalkylene carrier is a polyoxyalkylene monool prepared from 1,2-alkylene oxide

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and one or more primary alcohols having at least 8 carbon atoms (see col. 5, lines 46-67; col. 7, lines 41-57). The ratio of the carrier to the additive is 0.3:1 to about 2.0:1 (see col. 8, lines 14-27).

It would have been obvious to one of ordinary skill in the art to have combined the Mannich reaction product of EP with a carrier fluid because Malfer teaches that the carrier fluid further enhances the effectiveness of the Mannich product in minimizing intake valve deposits (see abstract).

EP fails to teach that the polybutylene has at least 20, 50 or 70% terminal olefinic double bonds as alkylvinylidene double bonds. However, Malfer teaches this difference (see col. 3, lines 26-56).

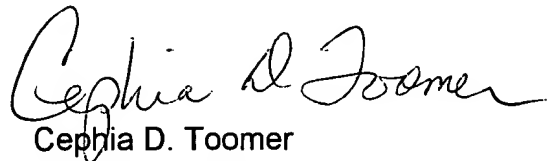
It would have been obvious to one of ordinary skill in the art to have prepared the compound with a polyisobutylene having the claimed alkylvinylidene double bonds because Malfer teaches that compounds prepared with this type of polybutylene are more reactive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 703-308-2509. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in cursive script, reading "Cephia D. Toomer".

Cephia D. Toomer
Primary Examiner
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April 4, 2003